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# COMPETITIVE INTELLIGENCE AND DEVELOPING SUSTAINABLE COMPETITIVE ADVANTAGE

LA INTELIGENCIA COMPETITIVA Y EL DESARROLLO DE UNA VENTAJA COMPETITIVA SOSTENIBLE

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## ABSTRACT

Privatization, partial tariff liberalization and entrance of foreign insurance companies in Iranian market pose serious challenges to domestic insurance companies. This paper discusses competitive intelligence as a means of gaining competitive advantage for insurance companies and seeks to study its effects on creation of sustainable competitive advantage. A sample of 123 middle and senior managers working in Iran Insurance Company in Tehran were surveyed. Data were collected via questionnaire and analyzed using Structural Equation Model (SEM) in PLS software. Results showed that competitive intelligence had a positive effect on creation of competitive advantage based on two sets of process and contextual factors, with the former exerting greater effect in this regard. It was concluded that companies were required to gain competitive advantage by establishing a strategic unit to collect, analyze and share intelligent information derived from internal and external environment.

## KEYWORDS

Competitive intelligence; competitive advantage; insurance; Iran Insurance Co.; structural equation model.

## RESUMEN

La privatización, la liberalización parcial de los aranceles y la entrada de empresas extranjeras de seguros en el mercado iraní plantea importantes desafíos para las empresas locales de seguros. Este artículo discute el caso de la inteligencia competitiva como un medio para ganar ventaja competitiva para las empresas de seguros y busca estudiar los efectos en la creación de ventaja competitiva sostenible. Se encuestó una muestra de 123 gerentes en posiciones medias y altas de la Iran Insurance Company en Teherán. La recolección de los datos se realizó a través de un cuestionario y fue analizada con el modelo de ecuaciones estructurales (SEM, por sus siglas en inglés) en el *software* PLS. Los resultados muestra-

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ron que la inteligencia competitiva tuvo un efecto positivo en la creación de ventaja competitiva basada en dos conjuntos de factores de procesos y contextuales, donde el primero tuvo en efecto mayor en este aspecto. Se concluyó que las compañías requirieron obtener ventaja competitiva al establecer una unidad estratégica para recolectar, analizar y compartir información inteligente derivada del ambiente interno y externo.

## **PALABRAS CLAVE**

Inteligencia competitiva; ventaja competitiva; seguros; Iran Insurance Co.; modelo de ecuaciones estructurales

## **INTRODUCTION**

In the 21st century, new types of organizations based on knowledge and networks have emerged in response to a complex, vague and changing environment characterized by indistinct organizational boundaries (Ahmad, 2015). Companies are faced with an increasingly competitive environment that makes it difficult to keep a sustained competitive advantage (Nenzhelele & Pellissier, 2014). To survive in such a marketplace, they must monitor business environment, gather intellectual information, and make proper and immediate decisions when encountering different opportunities and market threats to improve their performance compared to other competitors. Competitive intelligence (CI) is a strategic tool that allows organizations to achieve information in a systematic manner. CI is a process in which actionable intelligence is produced and published through planning, legal and ethical information gathering in the competitive environment, information processing and analysis to help decision making and develop competitive advantages in organization (Pellissier & Nenzhelele, 2013). In other words, this intelligence portrays a comprehensive image of current and future nature of competition in the marketplace for managers to make more informed decisions.

Recently, there has been a growing need for CI because organizations are continuously changing their services and marketing messages to maintain their successful performance. In today's unpredictable economy, companies resort to CI as a way of building and maintaining competitive edge. Insurance companies, which used to be oblivious of market research, have changed their outlook to include CI (Lanzoni & Marcus, 2004; Johns & Van Doren, 2010).

Insurance is one of the sectors contributing to economic growth. Insurance companies act as a source of risk management for enterprises and individuals. By providing protection, insurers can contribute to economic growth through channels of marginal productivity of capital, technological innovations and saving rate (Ćurak et al., 2009). In fact, economic growth is reflected in the soundness of a national insurance market (Han et al., 2010). In recent years, extensive measures have been taken to improve this industry in Iran, including privatization, tariff liberalization in some of insurance fields and encouragement of foreign companies to enter domestic market (Article 113 of Fifth Development Plan, p.137), which have changed the insurance industry and created a competitive marketplace in which companies are obliged to gain advantages over their competitors. Since foreign companies have great financial and experiential resources, technical power, and freedom in investing

their resources, they wield great competitive power; therefore, if internal insurance companies fail to prepare and achieve sustainable competitive advantages, they would be unable to survive in this competitive marketplace (Mazloomi & Dadvand, 2011). In today's fast-changing business environment, innovation is a perquisite of retaining competition (Khajeheian and Tadayoni, 2016). Innovation is not simply the incorporation of new technologies into new products or services, but in many cases it involves finding new models of doing business in the face of change and opens up new opportunities (Khajeheian, 2016a). It often entails changing the rules of the game (Afuah, 2009). Service innovation has become essential for achieving a competitive advantage (Dörner et al., 2011).

Iran Insurance Co. is the only public insurance company which has been active in recent years. This insurance company has hold the greatest portfolio share in insurance industry market for a long time thanks to its wealth of experience (established in 1935), experienced managers, and absence of active insurance companies in Iranian market. However, a variety of factors such as elimination of state market monopoly, unhealthy competition, lack of employees' motivation in state-run companies compared to their counterparts in private companies, and growth of insurance companies have accelerated the decline of portfolio share of this company in recent years (Statistical Annals of Insurance, 2013).

According to Article 116 of the Fifth Development Plan, the monopoly of Iran Insurance Co. over the insurance of executive authorities was terminated. Also, according to Article 113, foreign insurance companies are allowed to forge partnership with internal insurance companies with the aim of developing a joint business insurance company in Iran and attracting foreign investments by domestic insurance companies, with priority given to private companies.

As a result of privatization, many private companies with enormous financial resources have been established without any affiliation with administrative bureaucracy, which grants them flexibility in employing skilled workforce. Moreover, liberalization of insurance tariffs has deteriorated the competitive environment of the insurance market. In other words, imposition of impractical tariffs for insurance has driven them towards attracting customer and increasing their portfolio share. Another important issue is lack of employees' motivation in state-run companies, which is mainly provoked by difference systems of job promotion, payments, and remuneration in state-run and private companies. Indeed, private insurance companies have more flexible systems for payments and remuneration compared to Iran Insurance Co. and the process of job promotion is faster in private companies.

Finally, considering the aforementioned issues and a host of other reasons, Iran Insurance Co. should compete with other domestic and even foreign insurance companies to regain its proper portfolio share and redeem the trust of insured entities covered by this company. Therefore, the main goal of this research is to explore the effect of competitive intelligence on creating sustainable competitive advantage in Iran Insurance Co.

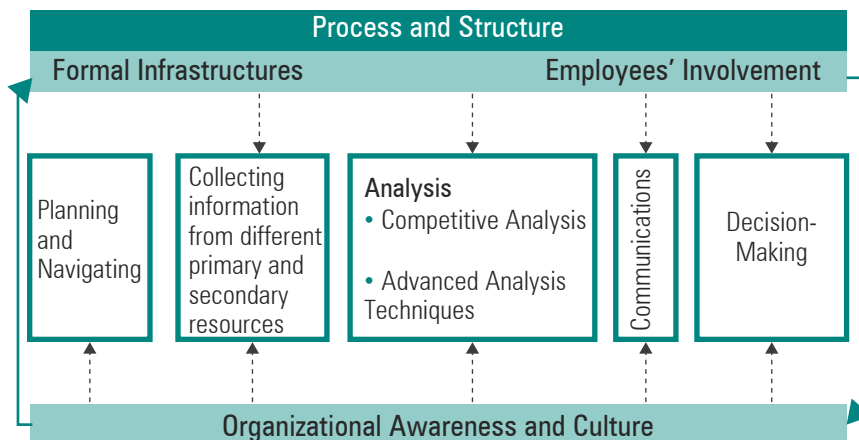
## LITERATURE

**Competitive intelligence:** The concept of competitive intelligence dates back to 5000 years ago in China. One well-known early work in this area is “Art of War” by Sun Tzu, which was the base of military intelligence development (Calof & Wright, 2008).

Competitive intelligence refers to knowledge and foreknowledge of the entire business environment that may result in subsequent action (Sharp, 2009, p.15). It is a process which barely depends on dynamic and competitive situations in business environment; therefore, a variety of definitions have been proposed for this concept in literature (Brody, 2008). Some of these definitions are as follows: competitive intelligence is a process in which an organization collects information about competitors and competitive environment to be used in planning and decision makings related to performance improvement (Wright et al., 2009). According to Bulley et al. (2014), Kotler & Keller (2009), and Fleisher & Blenkhorn (2001), competitive intelligence is a process that improves planning and decision making through gaining information from competitors and industrial environment. Santo & Correia (2010) and Herring (1999) presented the same definitions but Herring (1999) focused on planning for gaining and collecting information to achieve competitive intelligence. Jones & Van Doren (2010) presented four main advantages for competitive intelligence in service-oriented businesses: differentiation, preparation of integrated marketing communication plan, pre-sale of ideas to target audiences, and creation of validity for the company.

**Competitive intelligence process:** Competitive intelligence or intelligent is a continuous integrated process (Bulley et al., 2014), which encompasses a number of activities, steps, and structures that need be implemented in a sequence (De Pelsmacker et al., 2005). The common stages of competitive intelligence process cited in many studies include focus and planning, collection, analysis, communication, process and structure, organizational awareness, and culture (Dishman & Calof, 2008; Saayman et al., 2008).

Figure 1. Competitive intelligence process.



Source: Dishman & Calof, 2008

**Focus and planning:** In this stage, the organization specifies necessary information, their significance and validity period (Gilad & Gilad, 1985; Herring, 1999; Bose, 2008). In other words, an effective competitive intelligence process instead of gathering all possible information for organization or studying every purpose-related issue focuses on issues that are critical to senior managers (Gilad & Gilad, 1985; Herring, 1999).

**Collecting Information:** This stage involves identifying all potential information resources and their collection method including an analysis of environmental factors, telephone interviews, surveys, and observation of different Media and networks. Then, it is time to gather and study the data legally and ethically from all available resources (Bose, 2008; Dishman & Calof, 2008; Nasri, 2011). Also, resource selection depends on the type of data necessary information and factors such as cost, availability, ease of resource processing, and quality and quantity of information (Nasri, 2011).

**Data analysis:** This is the most important and challenging stage of the process as it demands great skills on the side of competitive intelligence team (Bose, 2008). This step also requires identification of patterns, communications, distributors, customers and competitors' affairs (Bose, 2008), interpretation and translation of raw data into organized and interpreted data to identify patterns, procedures, and mutual relationships with competitors (Miller, 2001).

**Communications:** In this step, the results of competitive intelligent are shared with all employees through various channels such as reports, e-mail, seminars, short notes, etc. (Fleisher & Blenkhorn, 2001). Moreover, this step entails the evaluation of competitive intelligence process, identification of advantages, and evaluation of effectiveness in decision-making process (Nasri, 2011). In other words, this stage provides feedbacks for improving intelligent process between decision-makers and intelligence team.

The objective of a competitive intelligence system is to help companies develop and sustain distinct competitive advantages by drawing on the organization's networks to develop actionable insights about various components of the business environment (West et al., 2015, p.81). Adopting to new environment and development of inter-firm linkages provides specific competitive advantages (Gonzalez-Perez and Velez-Ocampo, 2014, p. 535).

**Competitive advantage:** Nowadays, competitive advantage is vital for development and survival of a business in the market (Awuah & Gebrekidan, 2008). For most organizations, the Holy Grail is the successful attainment and retention of inimitable competitive advantage (Wright, 2013). Competitive advantage constitutes a key concept in strategy field discussed by Michael Porter. As early as 1980, it was referred to as "competitive strategy", but later it was replaced by "competitive advantage". Thus, identification of resources reflects a key issue in strategic management of companies (Barney, 1991).

The resource-oriented model of Hill & Jones (2009) discusses four factors that help development and maintenance of competitive advantage. Each of these factors

are derived from distinctive qualifications of the company. In fact, these are “general” distinctive qualifications of a company that allow the provision of more distinctive products tailored to customer’s demands, and reduction of costs (Hill & Jones, 2009). The main dimensions of competitive advantage are:

- **Efficiency:** In broad sense of the word, efficiency refers to the ratio of output to input. Here, input is used to mean the force of insurance and management of issuing and compensations of insurance fields. Also, output refers to a company’s services such as insurance and payment of compensations. In most companies, efficiency is measured through evaluating employees’ productivity. This helps a company achieve competitive advantage through costs saving (Hill & Jones, 2009).

- **Quality:** There is no comprehensive definition for quality, but most researchers argue that quality is defined by customers, which is the satisfaction derived from buying insurance or obtaining compensation fee, and can improve the competitive edge of services (Reed et al., 2000).

**Innovation:** Hill & Jones (2009) assert that innovation is the art of creating a new process and product which encompasses product innovation and process innovation. Innovation is a key factor in achieving sustainable competitive advantage. Khajeheian (2014) explains innovation as a competence building factor, and Hill & Jones (2009) argue that Innovation gives unique advantages to companies that is inimitable by competitors.

- **Responsiveness to customers:** Customers are the core of a business (Alharthi, 2012). Therefore, high level of responsiveness requires a company to identify and fulfil customers, and as a result the perceived value of customers would bring competitive advantage for company. Customer satisfaction can be achieved through high quality, product innovation and personalized products and services for satisfying the unique demands of customers. This dimension results in loyalty (Hill & Jones, 2009).

**Innovation:** Innovation allows competitive operation of firms and their survival in markets (Khajeheian, 2013, 2016b). In a competitive environment, a natural strategy of revenue-maximization requires increasing market share either by cutting costs, improving productivity or devising and introducing other product-related advantages (Gonzalez-Perez & Gutierrez-Viana, 2012). Camisón & Villar-López (2011) found that different types of non-technical innovation promotes the achievement of sustained competitive advantage. Bowonder et al. (2010) posit that innovation strategy can help a company in three ways: exciting customers, outperforming competitors, and building a new product portfolio. They found that innovation strategies allowed leading global companies to dominate their markets, outperform competition through innovation, and create competitive advantages. Innovation is defined as products, processes and organizational changes that do not necessarily originate from new scientific discoveries, and may be the outcome of applying existing technologies to new contexts (Žižlavský, 2011). Innovations not only cover technical and technological changes and improvements, but also address specific practical applications that originate from research (Hana, 2013).

### Developing a conceptual model

Cory (1996) offered a guidance for the analysis of competitive intelligence activities. He first considered competitive intelligence activities as an important means of increasing efficiency and effectiveness of company's operations, and then based on 4 questions of "VIRO" resource-oriented model, determined whether "competitive intelligence was a valuable, scarce, and inimitable source", and "whether the company was able to get advantage from this source". Results of this research showed that all competitive intelligence activities did not yield sustainable competitive advantage. For example, activities such as data analysis are more probable to create sustainable competitive advantage whereas actions like storage and information protection are less likely to develop sustainable competitive advantage. Finally, he offered a discussion of how competitive intelligence activities developed competitive intelligence.

Auxiliadora do Nascimento Mélo & Dumke de Medeiros (2007) developed a competitive intelligent system to improve management and modernize competitive market in Brazil. By reviewing the literature on intelligence, competitive intelligence system in health insurance companies, and quality of health services, they identified the main components of intelligence necessary for achieving competitive advantage. According to results, the designed model of this study could contribute to the survival of health insurance companies in Brazil by providing intelligent information and proper decision-makings under different circumstances.

Pellissier & Kruger (2011) studied the effect of strategic intelligence (business intelligence, competitive intelligence, and knowledge management) on identifying threats and opportunities in universal market, maintaining competition, and creating innovation and advantage for an organization. In this study, data were gathered through questionnaires distributed among 61 life insurance companies. According to findings, there were differences in intelligence strategies (competitive intelligence) of small and large organizations, but as a whole, intelligence strategy offered a proper framework for macro decision-makers.

Bulley et al. (2014) investigated the role of competitive intelligence in organizations, explored its intensity and complexity, and determined the importance of information gained through competitive intelligence of organization. This study adopted an explorative method and data was gathered by distributing questionnaires among 12 members of the research team and development unit of Ghana's XYZ Company. According to findings, this company had utilized formal and informal methods of producing intelligence information in R&D unit of XYZ Company, with most respondents believing that competitive intelligence played a critical role in their organization. Also, intelligence needs were identified by managers.

Rezaei Dolatabadi et al. (2011) developed a model that studied the effect of competitive intelligence and its components on competitive advantage of scientific companies in Isfahan, Iran. Data were gathered via questionnaires and analyzed by LISREL software. Results show that the application of a competitive intelligence plan



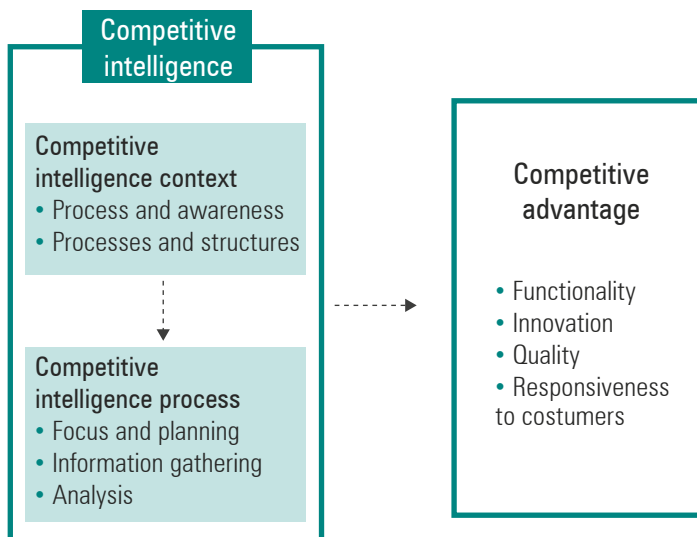
gave companies competitive advantage over their competitors and insured their survival. In other words, planning and focusing, collecting, analyzing, sharing and evaluating information improved the competitive power of company in achieving top positions in the market.

Nematizadeh et al. (2013) examined the effect of competitive intelligence in a descriptive study in which data was gathered via questionnaires distributed among 114 agents of Iran Insurance Co. in Kermanshah, Iran. Results revealed a significant relationship between competitive intelligence and insurance products sale in these agent companies. Agents also asserted that knowledge of competitors was integral to competitive intelligence.

Hamidzadeh et al. (2014), developed a dynamic competitive intelligence model to achieve sustainable competitive advantage in Insurance Industry during 2008-2013. They adopted a descriptive- explorative method in which data were gathered by distributing questionnaires among senior managers of Asia Insurance Company (central branches) of Tehran. In this study, the effective factors of competitive intelligence in Insurance Industry were described and confirmed. Results showed that managers were aware of competitive intelligence dimensions such as; employees' training, employees' communicative skills and loyalty to company, among others.

The conceptual model of this study integrates competitive intelligence model and competitive advantage model. In this mixed model, competitive intelligence directly affects competitive intelligence process and competitive intelligence process influence competitive advantage. Competitive intelligence model was adapted from Saayman et al. (2008) and competitive advantage model was derived from Hill and Jones' Strategic Management book (2009).

Figure 2. Conceptual Model.



Based on the conceptual model, the following research questions were raised:

- **Main questions:**
  - \* Does the competitive intelligence affect the development of competitive advantage in Iran Insurance Company?
- **Secondary questions:**
  - \* Do contextual factors of competitive intelligence affect the development of competitive advantage in Iran Insurance Co.?
  - \* Do process factors of competitive intelligence affect the creation of competitive advantage in Iran Insurance Co.?

## METHOD

This is an applied research with a descriptive method of data collection. Also, the library method was used to gather information from the literature and theoretical bases, to design questionnaires, and to develop an initial model of research. The main data gathering instrument was self-administered questionnaire the validity and reliability of which were confirmed. Study population consisted of 180 operational, middle, and senior managers of Iran Insurance Co. in Tehran. Using non-experimental research sampling method and Cochran's formula, 123 participants were selected.

The questionnaire comprised of 65 items that included; demographic questions (5 items), competitive intelligence (36 items), and competitive advantage (24 items), which were scored on a 5-point Likert scale (strongly agree, agree, no idea, disagree, strongly disagree) and option "never, rarely, sometimes, often, and always" were scored 5, 4, 3, 2, 1, respectively. The content validity of questionnaire was confirmed by professors and its structural validity was evaluated through exploratory and confirmatory factor analysis. By focusing on internal consistency of items and based on Cronbach's alpha, the reliability of competitive intelligence (94.0%) and competitive advantages (89.0%) was estimated. Results showed desirable reliability of scales. Also, the results of exploratory and confirmatory factor analysis confirmed the convergent and divergent validity of the questionnaire. Therefore, it is safe to assume the acceptable validity of the questionnaire. Furthermore, average test of population, Pearson correlation coefficient, and Kolmogorov-Smirnov test were used for data analysis and the relationship between variables was evaluated through structural equations and smart PLS software.

## DATA ANALYSIS

In this section, demographic of respondents such as age, organizational unit, level of education, major, position and experience of organizational activity are presented. According to results, 23.64% of managers were majored in management. 22% worked in staff units (planning and budget unit, training unit, research and development unit, etc.) and 5.75% had 11-40 years job experience. Also, more than 5.89% of respondents had a university degree (2.51% had BA and 3.38% MA and PhD) and 5.54% were 35-45 years old. Generally, most respondents were educated with high job experience, which

helped them understand the goals of insurance company and answer questions. At first, to investigate study variables such as competitive intelligence and competitive advantage, Kolmogorov-Smirnov test was used. According to results, all dimensions had normal distribution except for communications (Table 1). Therefore, parametric statistical tests can be used to answer research questions.

Table1. Results of Kolmogorov-Smirnov test for each variable.

Variables	No	Average	Variance	Sig	Results
Competitive intelligence	123	2.90	0.601	0.813	Normal
Competitive advantage	123	2.88	0.552	0.997	Normal
Awareness and culture	123	2.93	0.773	0.512	Normal
Structure and process	123	2.86	1.04	0.342	Normal
Focus and planning	123	2.71	0.856	0.281	Normal
Information collecting	123	2.84	0.854	0.169	Normal
Analysis	123	2.85	0.894	0.51	Normal
Communications	123	3.27	0.708	0.032	Abnormal
Functionality	123	2.1688	0.823	0.409	Normal
Quality	123	2.46	0.907	0.330	Normal
Innovation	123	3.01	0.927	0.259	Normal
Responsiveness	123	3.16	0.825	0.569	Normal

One-sample t-test was used to examine each variable. Considering the 5-point Likert scale, the null hypothesis in all research variables was:

H0:  $\mu=3$

H1:  $\mu \neq 3$

Table 2. Research variables in statistical population.

Variables	No	Average	Variance	Variance error
Competitive intelligence	123	2.90	0.601	0.054
Competitive advantage	123	2.88	0.552	0.049
Awareness and culture	123	2.93	0.773	0.069
Structure and process	123	2.86	1.04	0.094

Table 2. Research variables in statistical population.Continued

Variables	No	Average	Variance	Variance error
Focus and planning	123	2.71	0.856	0.077
Information colleting	123	2.84	0.854	0.077
Analysis	123	2.85	0.894	0.08
Communications	123	3.27	0.708	0.063
Functionality	123	2.1688	0.823	0.074
Quality	123	2.46	0.907	0.081
Innovation	123	3.01	0.927	0.083
Responsiveness	123	3.16	0.825-	0.074

Sample scores and results of one-sample t-test are shown in Table 3 & 4.

Table 3. Dimensions of research variables.

Variables	Variable results	Confirmed hypothesis
Competitive intelligence	Equal	H0
Competitive advantage	Lower	H1
Awareness and culture	Equal	H0
Structure and process	Equal	H0
Focus and planning	Lower	H1
Information collecting	Lower	H1
Analysis	Equal	H1
Communications	More	H0
Functionality	Equal	H0
Quality	Lower	H1
Innovation	Equal	H0
Responsiveness	More	H1

Table 4. One-sample t-test of research variables.

Variables	Test value=3					
	T	Df	Sig. (2-tailed)	Mean difference	95% confidence interval of the difference	
					lower	Upper
Competitive intelligence	-1.676	122	0.096	-0.09085	-0.1982	0.0165
Competitive advantage	-2.389	122	0.018	-0.119048	-0.21769	-0.02041
Awareness and culture	-1.002	122	0.318	-0.069919	-0.20803	0.06819
Structure and process	-1.459	122	0.147	-0.137195	-0.032337	0.04898
Focus and planning	-3.705	122	0.000	-0.286179	-0.43908	-0.13327
Information collecting	-2.005	122	0.047	-0.154472	-0.30698	-0.00196
Analysis	-1.815	122	0.072	-0.146341	-0.030593	0.01325
Communications	4.293	122	0.000	0.274390	0.014786	0.40092
Functionality	-1.611	122	0.110	-0.0119628	-0.26667	0.02741
Quality	-6.558	122	0.000	-0.536585	-0.69856	-0.37461
Innovation	0.208	122	0.835	0.017422	-0.14808	0.18292
Responsiveness	2.185	122	0.031	0.0162602	0.01525	0.30995

According to results, variables and the dimensions were on average satisfactory. It is estimated that less than 3 in some cases and it is estimated more than 3 in other cases, the variance extent is not sufficient to say it is good or not good.

Pearson correlation test. As shown in Table 5, there is a significant relationship between variables.

Table 5. Results of correlation test for main variables.

Variables	Competitive advantage	Contextual factors of competitive intelligence	Process factors of competitive intelligence
Competitive advantage	1	-	-
Contextual factors of competitive intelligence	0.6786	1	-
Process factors of competitive intelligence	0.7136	0.5751	1
Significant level of 0.01			

Test of model. Figure 3 and 4 show the structural equation model related to

secondary questions of research at two standard and significant levels where contextual factors (CF) and process factors (PF) variables were considered as endogenous latent and exogenous latent respectively.

Figure 3. Main model in standard coefficients level.

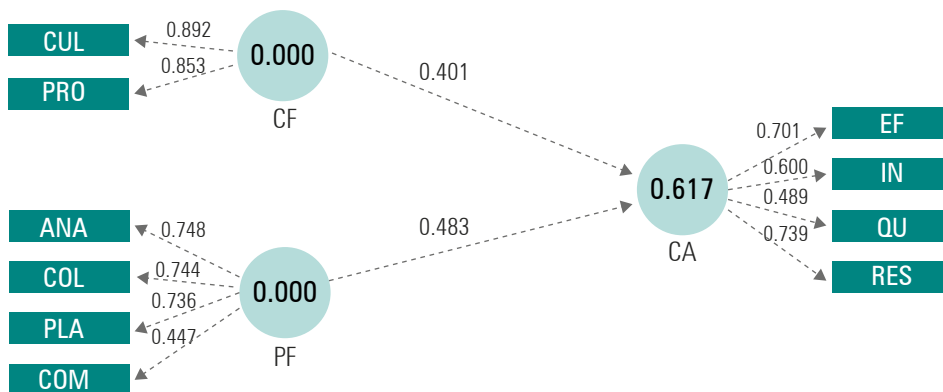
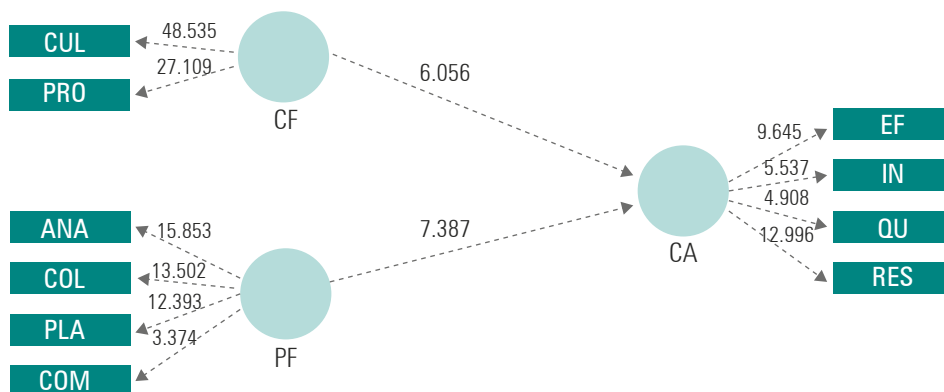


Figure 4. Main model in the significant level.



The results of path analysis of secondary questions are shown in Table 6.

Table 6. Results of path analysis for main research hypotheses.

Questions	Relationship in conceptual model	Characteristic	Path effect coefficient	T-value	Result
2	Contextual factors on competitive intelligence	CF-CA	0.401	6.066	YES
3	Process factors on competitive intelligence	PF-CA	0.483	7.387	YES

To evaluate the model of study, smart PLS software was used. Bootstrap non-parametric test (Tenenhaus et al., 2005) with a frequency of 300 was used for evaluating standard errors and answering questions. For the evaluation of structural model, the significant factor Z (T-value),  $R^2$  and  $Q^2$  criterion of structural model were evaluated. All criteria were at a significant level (Table 7).

Table 7. Model fitness for structural hypothesis.

Anticipant variable	Criterion variable	Path effect coefficient	T-value	R2	Q2
Contextual factors	Competitive advantage	0.401	6.066	0.617	0.761
Process factors	Competitive advantage	0.483	7.387	0.617	0.461

**General model fitness.** The general model included both measurement and structural models. In path modelling of PLS, there was no criterion for evaluating the entire model. Nevertheless, a general criterion proposed by Tenenhaus et al. (2005) for goodness of fitness was used for anticipating the general model performance. Geometric mean of statistical communality and  $R^2$  average were employed to measure this criterion. As shown in Table 8, the statistical population that confirmed suitability of model was greater than 0.5. The acceptable level of statistical population was greater than 0.5 (Table 8).

Table 8. The extracted variance average.

Variables	Indices	AVE	$R^2$
Competitive advantage	CA	0.519	0.617
Contextual factors of competitive intelligence	CF	0.76	-
Process factors of competitive intelligence	PF	0.563	-

$$GOF = \sqrt{\text{communality} \times R^2}$$

$$\text{Communality} = (563.0 + 76.0 + 519.0) / 3$$

$$R^2 = 617.0$$

The communality average (386.0), R2 average (617.0) and goodness of fitness index (448.0) were evaluated. This value is greater than the threshold of 36.0 for the value of R2 effect (Cohen, 1988). Thus, it can be said that the model under study had desirable anticipation power compared to other threshold values (small goodness of fitness (1.0), average goodness of fitness (25.0), and big goodness of fitness (36.0)). Therefore, the results confirmed the general validity of the model.

Answering the main research questions. Before testing the model, the correlation of variables were evaluated with the results reflecting a strong relationship between competitive intelligence and competitive advantage (Table 9).

Table 9. Correlation matrix of main variables.

Variables	Competitive intelligence	Competitive advantage
Competitive intelligence	1	-
Competitive advantage	0.785	1

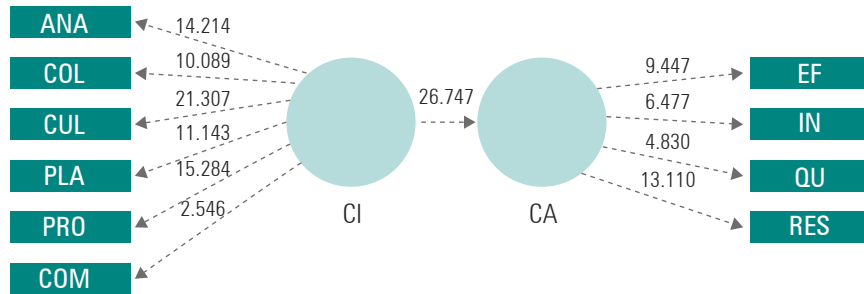
Figure 5 and 6 show the structural equation model related to main research question at two levels of standard and significant where competitive intelligence (CI) was exogenous latent variable and competitive advantage (CA) was endogenous latent variable.

Figure 5. Main model at the standard level.





Figure 6. Main model at the significant level.



Path analysis result of main question of research is shown in Table 10.

Table 10. Path analysis of main question.

Question	Relationship in model	Indices	Path effect coefficient	Result
1	Competitive intelligence on competitive advantage	CI-CA	0.785	yes

Results of evaluating the structural model fitness, Z significant factor (T-value), R<sup>2</sup>, and Q<sup>2</sup> criteria are shown in Table 11. As can be seen, all criteria were at the acceptable level. Also, as shown in Table 12, GOF was used to evaluate model goodness of fitness.

Table 11. Model fitness of structural hypothesis.

Predictive variable	Criterion variable	Path effect coefficient	T-value	R <sup>2</sup>	Q <sup>2</sup>
Competitive intelligence	Competitive advantage	0.785	27.721	0.617	0.251

Table 12. Extracted variance average.

Variables	Indices	AVE
Competitive intelligence	CI	0.544
Competitive advantage	CA	0.509

The communality average (526.0), R2 average (617.0) and consequently GOF (7.0) were estimated. This value was greater than the threshold (36.0) regarding the effect of R2 value (Cohen, 1988). It can be said that the studied model had desirable anticipation power compared to other threshold values. The results confirmed overall validity of the general model. Table 13 summarizes research results.

Table 13. Overall results.

Questions	Relationship in model	Indices	Path effect coefficient	T-value	Results
1	Contextual factors on Competitive advantage	CF-CA	0.401	6.339	YES
2	Process factors on Competitive advantage	PF-CA	0.483	7.234	YES
3	Awareness and culture effect on competitive advantage	CUL-CA	0.325	4.944	YES
4	Structure and process effect on competitive advantage	PR-CA	0.179	2.717	YES
5	Focus and planning effect on competitive advantage	PLA-CA	0.063	0.99	NO
6	Information collection effect on competitive advantage	COL-CA	0.298	4.38	YES
7	Analysis effect on competitive advantage	ANA-CA	0.192	2.617	YES
8	Communications effect on competitive advantage	COM-CA	0.086	1.182	NO
9	Competitive intelligence on competitive advantage	CI-CA	0.785	26.744	YES

## CONCLUSION AND SUGGESTIONS

Results show the effect of competitive intelligence on developing competitive advantage. It means that managers of Iran Insurance Company believe in the fact that competitive advantage can serve as a tool of achieving competitive advantage in insurance industry. By discovering new opportunities and threats, this intelligence acts as a radar that enables the company to identify the environment carefully and promptly (Rezaeian & Lashkar Bolooki, 2010). These findings are consistent with the literature (Cory, 1996; Ghannay & Mamlouk, 2012; Pellissier & Nenzhelele, 2013; Rezaei Dolatabadi et al., 2011). In other words, focus and planning, collecting, analyzing, sharing, and evaluating information would reinforce the company's competitive power for achieving a top position in the market. Also, as noted in

the literature, competitive intelligence functions and objectives of the company include maintaining and developing distinctive competitive advantages of company (Dishman & Calof, 2008), promoting the company's competitiveness (Johns & Van Doren, 2010), informing top-level decision-makings (Pellissier & Nenzhelele, 2013), facilitating the understanding of customers, regulators, and competitors and creating new opportunities (Nasri, 2011). Similar to the results of this research, contextual factors such as awareness, culture, structure, and process can influence developing competitive advantage in Iran Insurance Company, with factors of awareness and culture exerting the greatest effect. This results are in agreement with those of Hamidzadeh, et al. (2014) regarding the case of Asia Insurance Co.. Process factors such as focus and planning, information gathering, analysis, and communication also affect competitive advantage in Iran Insurance Co., with information gathering leaving the greatest effect. Not all competitive intelligence activities do result in sustainable advantage, as reflected in the results of Cory (1996). The study of Rezaei Dolatabadi et al. (2011) in Iran showed that information gathering had the greatest effect and information sharing the information had the lowest effect on creating competitive advantage.

Also, results suggested that competitive intelligence could bring about competitive advantage in Iran Insurance Co. Therefore, senior managers of Iran Insurance Co. are recommended to not only rely on the precedent of company's activity and its government affiliation, but anticipate and implement an ethical and codified plan to gain information about internal, external, and industry environment at the strategic level by developing a separate unit with professional and trained workforce in the organization for collecting such information. Results also show that planning and focus in Iran Insurance Co. do not have any effect on competitive advantage, but as shown in the literature, planning and focus are critical to competitive intelligence process and can increase effectiveness of competitive intelligence plan. Therefore, it is suggested that Iran Insurance Co. mainly focuses on this stage using key planners and decision-makers in competitive intelligence team.

On the other hand, information analysis is one of the most important and challenging stages of intelligence process, which is highly dependent on high skills of competitive intelligence team. Managers are advised to use professional internal and external analysts in their team. According to results, information sharing does not have any effect on competitive advantage in Iran Insurance Co. Therefore, it is suggested to reinforce informal relations and knowledge management, because in addition to sharing the results of intelligence, this stage allows an analysis of intelligence plan and its effectiveness.

## REFERENCES

- Afuah, A. (2009). *Strategic innovation: new game strategies for competitive advantage*. Routledge.
- Ahmad, A. (2015). Business intelligence for sustainable competitive advantage. In *Sustaining Competitive Advantage Via Business Intelligence, Knowledge Management, and System Dynamics (Advances in Business Marketing and Purchasing, Volume 22A)* Emerald Group Publishing Limited, 22, 3-220.
- Alharthi, S. Z. (2012). "Towards A Sustainable Competitive Advantage". *International Journal of Business Research and Development (IJBRD)*, 1(1), 17-31.
- Auxiliadora do Nascimento Mélo, M., & Dumke de Medeiros, D. (2007). "A model for analyzing the competitive strategy of health plan insurers using a system of competitive intelligence". *The TQM Magazine*, 19(3), 206-216.
- Awuah, G. B., & Gebrekidan, D. A. (2008). "Networked (interactive) Position: a New View of Developing and Sustaining Competitive Advantage". *Competitiveness Review: An International Business Journal*, 18(4), 333-350.
- Barney, J. (1991). "Firm Resources and Sustained Competitive Advantage". *Journal of management*, 17(1), 99-120.
- Bose, R. (2008). "Competitive Intelligence Process and Tools for Intelligence Analysis". *Industrial Management & Data Systems*, 108(4), 510-528.
- Bowonder, B., Dambal, A., Kumar, S., & Shirodkar, A. (2010). "Innovation strategies for creating competitive advantage". *Research-technology management*, 53(3), 19-32.
- Brody, R. (2008). "Issues in Defining Competitive Intelligence: An Exploration". *IEEE Engineering Management Review*, 3(36), 3.
- Bulley, C. A., Baku, K. F., Allan, M. M. (2014). "Competitive Intelligence Information: A Key Business Success Factor". *Journal of Management and Sustainability*, 4(2), 82-91.
- Calof, J. L., Wright, S. (2008). "Competitive Intelligence: A Practitioner, Academic and Inter-Disciplinary Perspective". *European Journal of Marketing*, 42(7/8), 717-730.
- Camisón, C., & Villar-López, A. (2011). "Non-technical innovation: organizational memory and learning capabilities as antecedent factors with effects on sustained competitive advantage". *Industrial Marketing Management*, 40(8), 1294-1304.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillside, NJ: L. Erlbaum Associates.

- Cory, H. D. (1996). "Can Competitive Intelligence Lead to a Sustainable Competitive Advantage?". *Competitive Intelligence Review*, 7(3), 45-55.
- Ćurak, M., Lončar, S., & Poposki, K. (2009). "Insurance sector development and economic growth in transition countries". *International Research Journal of Finance and Economics*, 34(3), 29-41.
- De Pelsmacker, P., Muller, M.-L., Viviers, W., Saayman, A., Cuyvers, L., & Jegers, M. (2005). "Competitive Intelligence Practices of South African and Belgian Exporters". *Marketing Intelligence & Planning*, 23(6), 606-620.
- Dishman, P. L., & Calof, J. L. (2008). "Competitive Intelligence: A Multiphasic Precedent to Marketing Strategy". *European Journal of Marketing*, 42(7/8), 766-785.
- Dörner, N., Gassmann, O., & Gebauer, H. (2011). "Service innovation: why is it so difficult to accomplish?". *Journal of Business Strategy*, 32(3), 37-46.
- Fleisher, C. S., & Blenkhorn, D. L. (2001). *Managing frontiers in competitive intelligence*. London: QUORUM BOOKS.
- Ghannay, J. C., Mamlouk, Z. B. A. (2012). "Synergy between Competitive Intelligence and Knowledge Management-a key for Competitive Advantage", *Journal of Intelligence Studies in Business*, 2(2), 23-34
- Gilad, B., Gilad, T. (1985). "A Systems Approach to Business Intelligence", *Business Horizons*, 28(5), 65-70.
- Gonzalez-Perez, M.A Velez-Ocampo, J.F. (2014), "Targeting one's own region: internationalisation trends of Colombian multinational companies", *European Business Review* 26(6), 531 – 551
- Gonzalez-Perez, M. A., & Gutierrez-Viana, S. (2012). "Cooperation in coffee markets: the case of Vietnam and Colombia". *Journal of Agribusiness in Developing and Emerging Economies*, 2(1), 57-73.
- Hamidzadeh, M. R., Roosta, A., Lajevardi, J., & Mohamadian, M. (2014). "Providing a Model for Achieving Sustainable Competitive Advantage Based on Competitive Intelligence in Insurance Industry and Evaluating Affecting Indices and Dimensions". *Asian Journal of Research in Marketing*, 3(2), 220-233.
- Han, L., Li, D., Moshirian, F., & Tian, Y. (2010). "Insurance development and economic growth". *The Geneva Papers on Risk and Insurance Issues and Practice*, 35(2), 183-199.
- Hana, U. (2013). "Competitive advantage achievement through innovation and knowledge". *Journal of Competitiveness*, 5(1), 82-96.
- Herring, J. P. (1999). "Key intelligence topics: a process to identify and define intelligence needs". *Competitive Intelligence Review*, 10(2), 4-14.

- Hill, C. W., & Jones, G. R. (2009). *Strategic Management Theory: an Integrated Approach*, 9th Edition. Canada: Cengage Learning.
- Johns, P., & Van Doren, D. C. (2010). "Competitive Intelligence in Service Marketing: A New Approach with Practical Application", *Marketing Intelligence & Planning*, 28(5), 551-570.
- Khajeheian, D. & Tadayoni, R. (2016). User innovation in public service broadcasts: creating public value by media entrepreneurship, *International Journal of Technology Transfer and Commercialisation*, 14(2), 117–131.
- Khajeheian, D (2016a), "Telecommunication Policy: Communication Act Update", *Global Media Journal-Canadian Edition*, 9(1) 135-141.
- Khajeheian, D. (2016b). "Audience Commodification: A Source of Innovation in Business Models". *Technology Innovation Management Review*, 6(8), 40-47.
- Khajeheian, D. (2014), A Perspective on Media Entrepreneurship Policy: Globalization Of Knowledge And Opportunities For Developing Economies. *Journal of Globalization Studies*, 5(2), 174-187.
- Khajeheian, D. (2013). "New Venture Creation in Social Media Platform; Towards a Framework for Media Entrepreneurship". In *Handbook of Social Media Management* (pp. 125-142). Springer Berlin Heidelberg.
- Kotler, P., & Keller, K. L. (2009). *Marketing management (Vol. 4)*. US: Pearson Education, Inc.
- Lanzoni, G., & Marcus, N. (2004). "Seeking market research/competitive intelligence". *Limra's MarketFacts Quarterly*, 23(1), 20-23.
- Mazloomi, N., & Dadvand, S. (2012), "Identification and Prioritization Of Effective Factors In Achieving Competitive Advantage in Insurance Companies", *Insurance Bulletin*, 27(2), 81-109. (in Persian).
- Miller, S. H. (2001). "Competitive Intelligence an overview". *Competitive Intelligence Magazine*, 1(11).
- Nasri, W. (2011). "Competitive intelligence in Tunisian companies". *Journal of Enterprise Information Management*, 24(1), 53-67.
- Nemati zadeh, S., Adab, H., & Hezarkhani, H. (2013). *The effect of competitive intelligence on insurance products sale, the case of Iran insurance company agents in Kermanshah*. Master's thesis. Iran: Islamic Azad University. (in Persian).
- Nenzhelele, T. E., & Pellissier, R. (2014). "Competitive intelligence Implementation challenges of small and medium-sized enterprises". *Mediterranean Journal of Social Sciences*, 5(16), 92.

- Pellissier, R., & Kruger, J. P. (2011). "A study of strategic intelligence as a strategic management tool in the long-term insurance industry in South Africa". *European Business Review*, 23(6), 609-631.
- Pellissier, R., & Nenzhelele, T. E. (2013). "Towards a universal competitive intelligence process model". *SA Journal of Information Management*, 15(2), 7.
- Reed, R., Lemak, D. J., & Mero, N. P. (2000). "Total quality management and sustainable competitive advantage". *Journal of quality management*, 5(1), 5-26.
- Rezaeian, A., & Lashkar Bolooki, M. (2010), "Competitive Intelligence and Strategic Decision-making", *Business Management Outlook*, 9(2), 43-65. (in Persian).
- Rezai dolatabadi, H., Zeinali, Z., & Shekarchi Zadeh, Z. (2011). "Studying the Effect of Competitive Intelligence on Developing Competitive Advantage". *Business management outlook*, 10(5), 9-25. (in Persian).
- Saayman, A., Pienaar, J., De Pelsmacker, P., Viviers, W., Cuyvers, L., Muller, M. L., & Jegers, M. (2008). "Competitive intelligence: construct exploration, validation and equivalence". *Aslib Journal of Information Management*, 60(2), 383-411.
- Santos, M., & Correia, A. (2010). "Competitive Intelligence as a source of Competitive Advantage: An Exploratory Study of the Portuguese Biotechnology Industry". *Proceedings of the European Conference on Knowledge Management*, Famalicão, Portugal. September 2–3, 867.
- Sharp, S. (2009). *Competitive intelligence advantage: how to minimize risk, avoid surprises, and grow your business in a changing world*. John Wiley & Sons.
- Tenenhaus, M., Vinzi, V. E., Chatelin, Y. M., & Lauro, C. (2005). PLS path modeling. *Computational statistics & data analysis*, 48(1), 159-205.
- West, D., Ford, J., & Ibrahim, E. (2015). *Strategic marketing: creating competitive advantage*. Oxford University Press.
- Wright, S. (2013), "Converting input to insight: Organising for Intelligence-Based Competitive Advantage", pp 1-35 in Wright, S. (Ed), *Competitive Intelligence, Analysis and Strategy: Creating Organisational Agility*, Abingdon, UK, Routledge.
- Wright, S. (2014). *Competitive intelligence, analysis and strategy: Creating organisational agility*. Routledge.
- Wright, S., Eid, E. R., & Fleisher, C. S. (2009). "Competitive intelligence in practice: empirical evidence from the UK retail banking sector". *Journal of Marketing Management*, 25(9-10), 941-964.
- Žižlavský, O. (2011). "Zapojení zákazníků do inovačního procesu jako prostředek vedoucí ke zvyšování výkonnosti podniku". *Journal of Competitiveness*, 3(1), 15-24.